Testing Days Impacting Instruction

How to continue with meaningful instruction when the schedule is different, your classes are different, you are tired, your students are tired and the last thing you want to do is teach a rigorous lesson plan

Incorporating different ideas in instruction during the testing windows may help combat testing fatigue and apathy. Some may provide learning opportunities tied to standards and others may be better for the well-being of a "tested" student - recharging them based on their needs (i.e. physical movement, socialization, independence, and choice). Every student and school is different these ideas are a starting point to spur some great lessons.

Ideas:

- "Brain Breaks" (www.gonoodle.com, "Minute to Win It" games)
- Fun Science Labs
- Problem Based/Project Based (maybe cross-disciplines)
- Game learning (board games, kahoot, Teacher Gaming Network)
- Collaborative activities (i.e. team building, group activities)
- Simulations (i.e. "Reading Camp")
- Changes of environment
- **Smart Snacks**
- Student choice with the arts (i.e. music, fine art activities)
- De-stressing techniques (i.e. breathing exercises, yoga, meditation)

A Note from... Jeremy Eltz, Assistant Director of CCR

Thank you for the huge response to the first edition of the Teachers' Toolbox! The specialists put a great amount of work into the resource and want to better serve the needs of teachers and administrators working in the trenches. As March begins and we look at the upcoming state assessments, we want to wish you and your students the best of luck. We understand how difficult it can be to prepare for these tests and how much emphasis is placed on them. All of us have been teachers and understand the test doesn't show all the great things your students are able to do. Please use us as a resource, or if needed, someone to share your concerns with.

pecialists

Bruce Blomberg

Social Studies

Jarred Corwin

Secondary Science

/STEM

Nick Flowers

Elem.

Math/Science/STEM

Dena Irwin

Business/Marketing/IT Trade and Industry

Sue Henry

Health

Science/Heath/P.E.

Julia Johns

Alternative Ed/Literacy Technology

Jill Lyday

Literacy/Hoosier Family Global Learning &

of Readers

Find past editions of Teachers' Toolbox here.

Alyson McIntyre-

Reiger

FACS and Work Based

Learning

Amy Marschand

High Ability

Melanie Martz

Secondary Literacy

Davis Moore

Bill Reed

Secondary Math/STEM

Mary Rinehart

Engineering and

Jill Woerner

World Languages

John Wolf

Elementary Literacy

For PLCs: Turn and Talk

This month CCR encourages you to find a few minutes to talk to a fellow teacher about how you engage your students and spark the love for your content in your classroom. Use this article by Jessica Lahey, a contributing author (and English Teacher) for The Atlantic.

In this article, Lahey talks to Teller, the silent half of the magic duo Penn and Teller about his time spent as a Latin teacher in Lawrenceville, New Jersey. Teller believes that performance is an essential part of effective teaching. Teller says, "The first job of a teacher is to make the student fall in love with the subject. That doesn't have to be done by waving your arms and prancing around the classroom; there's all sorts of ways to go at it, but no matter what, you are a symbol of the subject in the students' minds."

Updates from OSA

The Office Student Assessment encourages teachers to take any questions about assessment logistics (timing, etc.) vour Corporation Test Coordinator (CTC). CTCs receive updates from OSA as they are available.

Hoosier Family of Readers' Bicentennial Classroom Challenge

Superintendent of Public Instruction Glenda Ritz and the Hoosier Family of Readers challenge classrooms across Indiana celebrate to the Indiana Bicentennial reading 200 books (print or digital) during the 2015-16 school year! When you reach the challenge goal, take a photo of your class with a visual that displays your accomplishment! Be creative! We would love to celebrate your class and their reading accomplishments for the Bicentennial! Take a group photo with something visual that displays all the books the class read, complete this form, upload your photo, and click Submit.

In this Issue:

- 2 More Information
- 3 **Elementary STEM**
- 4 ELA/Literacy
- 5 Secondary Science
- 6 Secondary Math
- 7 Social Studies
- 8 World Languages
- Business, Marketing, IT & Entrepreneurship
- FACS & WBL
- Trade and Industry 11
- 12 Engineering and Technology



Directions for joining the Learning Connection:

1. Go to

www.learningconnection.doe.in.gov

- 2. Join/log in to Learning Connection
- Choose "My Communities," then click "Find A Community"
- Leave "IDOE Community" search option filled
- 5. Type in the name of the community into the keyword box

Many of the specialists also maintain Learning Connection Communities for their content area. Below you will find names of communities that may be of interest to you!

- "Teachers of Students with High Abilities"
 - · "Curriculum and Instruction"
- "Assessment Information for Teachers"
- "Social Studies Collaborative"
- "Indiana Literacy Liaisons...Read On, Indiana!"
- "Elementary Math, Science, and STEM"
- "Literacy in the Middle" (Middle School)
- "Indiana Mathematics"
- "Health Educators"

- "Science Educators Discussion Group"
- "Secondary ELA/Literacy Collaborative"
- · "World Languages and Cultures"
- "Family and Consumer Sciences Educators and Friends"
- "Indiana Engineering and Technology Education"
- "Business Marketing and IT Education
- · "Alternative Education"
- "AP Teachers and Coordinators"

A touch of humor...



Why science teachers should not be given playground duty.

DID You P

Do you know who the identified high ability students are in your classroom?

If not, please contact your corporation high ability coordinator. If you need assistance, please contact Amy Marschand at marschan@doe.in.gov.

High Ability Education Requirements - IC 20-36

Indiana school corporations are required to:

- Identify students with high ability in all grades, K-12, in accordance with the Indiana Definition of High Ability Student.
 - The Indiana definition is: "High Ability Student" means a student who: performs at, or shows the potential for performing at, an outstanding level of accomplishment in at least one (1) domain when compared to other students of the same age, experience, or environment; and is characterized by exceptional gifts, talents, motivation, or interests.
 - While there are additional domains of high ability that *may* be served (for example, visual and performing arts), the required domains of high ability that Indiana schools must identify for are the General Intellectual and Specific Academic domains. For now, the designations are for students with high ability in Language Arts (HA-LA), students with high ability in Math (HA-Math), and students who have high ability in both Language Arts and Math (HA General Intellectual).
- Provide "appropriately differentiated curriculum and instruction" to identified students in the relevant core content area(s).



Teachers' Toolbox

Focused on Science, Technology, Engineering, and Mathematics

March 2016

Resources for Breaking Down the Math Standards

Many people ask questions about what a standard means or what are the expectations for a specific standard. When you are looking at a standard, it is beneficial to look at several documents that the DOE has available on our Mathematics website.

Mathematics Standards Vertical Articulations

This allows you to look at how the standards are presented in previous grades and how a standard is built on in future grades. It can also answer many questions about expectations by knowing the background information a student should have and where the content will be going.

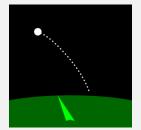
Mathematics Standards Resource Guides

Here you will find the standard along with the vocabulary within the standard that teachers found to be important to the standard. It is important to keep in mind that these vocabulary words are not meant to be a list of grade level, mastery vocabulary words, but instead to be viewed as words teachers in the field thought were important to understand the standard. There is also a sample problem that matches to each standard to help teachers see one way that the standard is applied.

Mathematics Standards Correlation Guides

If you find resources and materials that you would like to use but they are aligned to either the 2000 IAS or Common Core, you can use the correlation guide to assist in matching up the standards to see if they align to the Adopted 2014 standards.

Check this Science App Out:



ISS Spotter

Do you have students who dream of being an astronaut or want to learn more about outer space? Sharing this app with families can spark interest in space by making it easier to spot the International Space Station (ISS). You can see the forecast of visible passes and set alarms to be on time to view the ISS. The built in compass and tools will allow you to spot the ISS easily.

Pi Day

Do you plan to celebrate Pi Day with your class this year on March 14th? Use the hashtag #INelemSTEM to showcase the great lessons and activities you are doing with students.

Connect with me...

Nick Flowers

E-mail: nflowers@doe.in.gov

Learning Connection Community:

Elementary Math, Science, and STEM

Twitter: @MrNickFlowers

Use #INelemSTEM to showcase the great science, technology, engineering, and/or math activities going on at the elementary setting.



Teachers' Toolbox March 2016

Writing: Pre-Writing/Planning Mnemonics

Students may struggle with generating ideas for writing when given specific genres of writings. Below are some mnemonics for provided by Adlit.org that a teacher may model and help students practice.

Mnemonic	Genre	Stands for	Reference
W4H2	Story	Who/what/when/where?How does it end?How does character feel?	Graham, Harris, & Mason (2005)
DARE	Argumentative	 Develop a topic sentence. Add support. Reject opposition. End with conclusion 	De La Paz & Graham (1997)
STOP	Any	Stop and think of purpose.	Troia, Graham & Harris (1999)

Writing: Argumentative Words

As secondary literacy specialists, we field many questions about persuasion and argument and the differences and similarities and resources for both. In our research for resources, we have found that the Utah Education Network has a great link on their site which includes rubrics, student samples from all grades, and resources for instruction. It also includes a **Teaching Channel video** on Socratic Seminars and discussion of supporting claims and counter claims. Please utilize our English/Language Arts Standards Correlation Guide to see the correlation between Indiana State Standards and Common Core Standards.

Link: Argumentative Writin What you will find:

- **Educator Resources**
 - The 7 C's of Argumentation Argument, Persuasion, or Propaganda?
 - Text Dependent Argument Writing
 - Tch Video: Socratic Seminar
- **Lesson Plans/Student Activities**
 - Analyzing Famous Speeches as Arguments
 - Organizer
 - Interactive Venn Diagram
 - So You Think You Can Argue

For and Against Graphic

Strategy Spotlight:

Student: "I can't think of anything to write!"

Picture this: you have assigned a writing assignment that is full of student choice and freedom, and the first thing you hear is the students don't know what to write. Below are three quick and easy strategies to try and combat this obstacle.

Student Talks, Teacher Writes

Have your student stand up, and you sit in their desk and pick up his/her pencil and paper. Tell the student to just talk, and that you'll write.

Audio Record it

Find a way the student can "speak" their essay rather than "writing" it. A digital recorder, a student computer with a microphone, or an app on a phone are options. Depending on the purpose of the writing and where the assignment is in the writing process, the student could then listen to his/her ideas and transcribe them.

Audio Transcribe it

Find an app or tool that will transcribe speaking into text. Sometimes these tools will then have the capability to be sent in an email and the student can then use this text as a start to a draft. Teacher: "About what do I

have them write?!"

- Cross-discipline topics
- An in-class reading
- A independent reading piece
- Current events
- NYT: Learning Network
- Wonderopolis
- Images, poems, songs

Speciallist Contact

Melanie Martz (317) 232-9013 mmartz@doe.in.gov **Julia Johns** (317) 233-4936 jjohns@doe.in.gov

Jill Lyday (317) 232-0867 jlyday@doe.in.gov

Literacy FOCUS: a new monthly resource

The purpose the Literacy FOCUS of the Month is to provide guidance to administrators and teachers for supporting a monthly, school wide instructional emphasis based on best practices and research-based strategies in literacy. This "user-friendly" support tool will assist districts and schools in the implementation of reading instruction in classrooms across multiple grade levels, as well as different subjects/content areas. The topics in the FOCUS range from policies and procedures to the five essential components of reading as identified by the National Reading Panel. The material is devoted to strengthen administration and teacher content knowledge by focusing on one topic each month. Although the monthly FOCUS will highlight and supplement a specific procedure or skill, it is impossible to teach the components in isolation; therefore, the Literacy FOCUS of the Month should serve to present a school-wide shared commitment to literacy.

Links to the FOCUS newsletters:

March 2016-Comprehension **FOCUS**

February 2016-Writing **Connected to Texts FOCUS**

January 2016-Vocabulary FOCUS

Provided by John Wolf, Elementary Literacy Specialist (317) 234-6702 jwolf@doe.in.gov

Page 4 -

Secondary Science

Teachers' Toolbox March 2016



Digital Science Notebooks

With technology becoming a huge piece of the classroom, digital notebooks is an option that might present itself. As you consider making this transition, there are some items to consider. How will you assist your students in keeping their digital notebook organized? This question becomes quite complex as students start compiling notes, lab reports, analysis of reading current events, and reflections of their learning. How will they submit their digital notebook for review? There are many ways to conquer digital notebooks depending on technology available, device, and platform.

Why go with a digital science notebook? As more schools move to 1 to 1 classrooms, digital science notebooks will enable students to collaborate and work in the digital realm while having experience with documenting, communicating, and evaluating data. A few possibilities for programs/platforms to use while making digital science notebooks; google sites, google apps, notability (iPad app), Evernote (iPad app), a learning management system (like canvas), OneNote, Blendspace, dropbox, and numerous other options.

Resources:

Template for a google site http://tinyurl.com/j2x32yq

Google App Webinar http://tinyurl.com/h9bz76h

Microsoft OneNote http://tinyurl.com/z34eqvl

Global Learning in Biology

Biology by definition is the study of living organisms, so why not spice things up in your Biology class by showing students how connected their learning can be to the rest of the world. Here's just one example:

Standard Description: Understand that and describe how organisms are influenced by a particular combination of living and non-living components of the environment.

Suggestion for Integrating International Content: Have students research and diagram the sequence of events that led to an outbreak of bubonic plague when the World Health Organization used the pesticide DDT in Borneo for mosquito control in the 1950s. The action was an attempt to decrease the incidences of malaria. New internationalized Science standards will be coming shortly! Please stay tuned!

Provided by Jill Woerner, IDOE Global Learning Specialist

Content News

As you perform labs and demonstrations in your classroom, continue being safety conscious. Be sure to have students safely and correctly dispose of chemicals/waste. If you ever have questions about disposal, visit http://www.favoritesservice.net/materials/A48/flinn-chemical-disposal-manual.pdf for a free guide.

Specialist Contact

Jarred Corwin

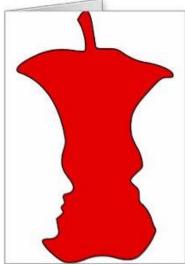
jcorwin@doe.in.gov Secondary Science and STEM Specialist



Follow us on the <u>Learning Connection</u> Science <u>Educator's Discussion Group</u>

Secondary Math

Teachers' Toolbox March 2016



Do you see what I see?

Are students just seeing what we tell them to see or are they seeing what they need to be seeing? When we put up examples and show students methods of solving problems we sometimes inadvertently limit the ability of students to problem solve and see the mathematics in a much deeper and much more meaningful way. For instance what do you see in the picture to the left? I could tell you what to see and how to specifically focus your attention so you see what I want you to see. What other images would you miss out on seeing by me giving you so much direction? Teachers need to be facilitating discussions with students that force the student to look closely at what they are doing and the problems they are working on in class and on their assignments. They need to let the students look at the problems and tell the teacher what they see. Some

good questions to be asking students would be: How are all the problems from last night assignment alike? Which problem on last night's homework was the hardest for you and why? How would you describe the problem(s) using correct mathematical terms? What math skills did you have to use to solve the problem(s)? Can you write a story problem that would require the use of the problem(s) you are working? Have you ever seen problems like these before? If so, where? These types of questions will get the students looking for similarities and differences in the problems they are working. These questions will ask the students to relate the problems they are seeing to other problems they have worked in the past. They will ask the students to make connections to what they already know. This is what teachers must do so they students remember the math they are being taught. You will learn far more about what your student know and don't know and what they are capable of doing mathematically by asking these questions than what you normally learn by giving a quiz and/or test. Try leaving your student's vision open ended and find out what THEY are seeing.

Research and further reading to support the use of Making the Math Visible and Mathematical Discourse

Smith, M.S. and Stein, M.K. 5 Practices for Orchestrating Productive Mathematics Discussions. Reston, VA: National Council of Teachers of Mathematics, 2011.

National Council of Teachers of Mathematics (2014). *Principles to Action: Ensuring Mathematical Success for All.* Reston, VA: National Council of Teachers of Mathematics.

Resources:

Orchestrating Mathematical Discourse to Enhance Student Learning by Gladis Kersaint, PH.D.

Talking Math: 6 Strategies for Getting Students to Engage in Mathematical Discourse

 $\underline{100\ Questions\ That\ Help\ Promote\ Mathematical}}\\ \underline{Discourse}$

Content News

More Files and More Resources on the mathematics Web-page.

IDOE and AP-Tip IN has Calculus Resources Posted. AP-Tip IN's Brian Passwater created Calculus Resources for all Indiana teachers to use and they are now posted at: http://www.doe.in.gov/standards/mathematics We have also added more files and resources for districts/schools/teachers to use to help them with their math instruction. Check back often to see what is new.

Specialist Contact

William Reed Secondary Math and STEM Specialist wreed@doe.in.gov 317-232-9114

Social Studies

Teachers' Toolbox March 2016









BICENTENNIAL RESOURCE

<u>The Indiana Historian</u> The Indiana Historian is a magazine on varied topics in Indiana history, which demonstrates and encourages good research techniques and the use and proper documentation of a variety of primary sources. Photographs, illustrations, maps, and interesting documents enhance each issue. Activities are suggested to help the learning process and add resources for local and state history. <u>Indiana Almanac</u> Events in Indiana history in almanac form.

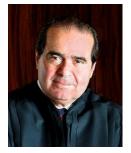
- <u>Indiana Territory</u>) This issue documents the formation of Indiana from the Northwest Territory, through various stages as Indiana Territory. Includes discussions of finances and slavery. William Henry Harrison's life and career is highlighted in the timeline.
- <u>Indiana Statehood</u> Provides details about the process, the people, and the times that led to Indiana's acceptance as the nineteenth state on December 11, 1816.
- <u>Indiana Constitution of 1851</u> Describes the rewriting of the Constitution and why, the constitutional convention of 1851, its members, and the differences between the two Indiana Constitutions, women's rights, and African-American immigration.
- <u>Lewis & Clark Indiana Connections</u> The state of Indiana has an important, recognized connection to the Lewis and Clark Expedition. That connection was reinforced with a National Signature Event in Clarksville in October 2003.

BICENTENNIAL ACTIVITIES

Indiana's 2016 bicentennial celebration will honor our state's past as we build our future. The Indiana Department of Education would like to promote and support the bicentennial projects and programs schools will be using in their schools.

Please share with us what your school/classroom will be doing to celebrate Indiana's Bicentennial. We would like to acknowledge your efforts as well as create a resource that will be helpful to other schools and classrooms.

Simply fill out the <u>application form</u>. You can include links to any materials (documents, videos, presentations, etc.) that you wish.



TOPIC OF THE MONTH: The Legacy of Justice Antonin Scalia

Last Saturday, Supreme Court Justice Antonin Scalia passed away. Scalia was known for his incisive legal opinions, penetrating questions during hearings, and his embrace of originalism in interpreting the law. This eLesson provides students an overview of Scalia's professional career and judicial philosophy, and affords an opportunity to explore some of the landmark Supreme Court cases to which Justice Scalia contributed.

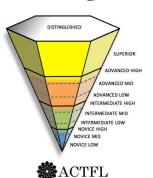
World Languages

Teachers' Toolbox March 2016

Measures of Performance or Proficiency?



I can build proficiency -based units!! Have you ever wondered what everyone is talking about when they keep mentioning moving toward "proficiency" in their classroom? It's not just a buzz word to sound like they are "in the know". This is a tested and true method of instruction that is producing much more capable speakers in the classroom. By focusing on the three modes of communication: Interpersonal, Interpretative and Presentational, you can begin to rethink how students learn language and you can make it purposeful for them. Allowing for student voice & choice, infusing high quantities of target language and focusing on proficiency, your students will be producing more than you ever thought possible....especially at the lower levels of instruction! Using the ACTFL proficiency graphic (right), think about where you think your students are. Then, click here and choose your language along the left to hear samples of students at each of those levels!



Performance vs. Proficiency – How does this really look?

Mme. F. wants her students to practice their newly acquired greetings and basic details so she asks students to ask/answer questions with a partner. Later, she has them ask those (rehearsed) questions to an exchange student that she can bring in to her class as a guest speaker. These are PERFORMANCES!!

Later, Mme. F. sets up a Skype call with her partner classroom in Strasbourg, France. Students begin by asking their rehearsed questions, but then must muddle through answering their counterparts' questions. Students struggle a bit with the native language they're hearing but can answer with simple responses! This is PROFICIENCY!!!

Are you ready to take your first steps toward proficiency?

It's easy to get overwhelmed when considering a shift in practice. You're moving from "the way you were taught" to a way that will foster more language production from your students. Try not to get stressed about this and focus on with whom you want your students to be able to interact at the conclusion of a unit. Try your hand at putting those ideas into "Can do" statements for your students. Better yet, let your students help you determine what they think they should be able to do at the end of a unit! Starting with the end in mind with Can do statements is the first step toward proficiency-based instruction.

Proficiency-focused:



Start Small!

Let this link and graphic help guide you as you begin thinking about a shift toward a proficiencybased unit! Click below for more!!! **Proficiency** pathways & classroom <u>ideas</u>

Upcoming Events - World Languages
Central States Conference - March 10-12, 2016
Columbus, OH www.csctfl.org
Clabal Gressmands Conference - Lune 20, 2016

Global Crossroads Conference – June 20, 2016 "Connect, Engage, Exchange" More details soon!

A big "thank you" to Rose Egan, Spanish teacher at Cathedral High School for sharing her knowledge with us in this edition. You'll be seeing more of her great

proficiency in upcoming editions.

message about

Resources:

Who is the audience for your WL students? How authentic is it to have your students ONLY talking to each other? Unrehearsed interactions are more proficiency focused. Look for the April edition for more info about connecting with schools around the world!!

Page 8

Content News

A huge **CONGRATULAZIONI**

to my predecessor, Caterina
Blitzer, as she has been awarded
the Paul Simon Award for her
leadership in the promotion of
language learning and
international understanding.
Also, the Recteur de l'Academie de
Strasbourg, France will be here in
April. He will be visiting a school
and hoping to match up French
classrooms in Indiana with
classrooms in Strasbourg! Would you
like a French counterpart?? Please
send me a message to be on the list!!

Specialist Contact

Jill Woerner @globaledindiana Global Learning and World Languages Specialist jwoerner@doe.in.gov 317-234-5705

Business, Marketing, Information Technology, & Entrepreneurship

Teachers' Toolbox March 2016



When I was in the classroom I really liked using the "Shake Up Learning" resources for my classes and professional development for my colleagues. Kasey Bell is the creator of the website. She is a Google Certified Innovator and Google Certified Trainer. If you wish to subscribe to her website, subscribers get access to a of Google Cheat set Sheets http://www.shakeuplearning.com/subscribe/.

Kasey also has a new eBook on Google Classroom available as well: The Teacher's Guide to Google Classroom that includes a free bonus guide for students.

Carmel High School Certification Spotlight

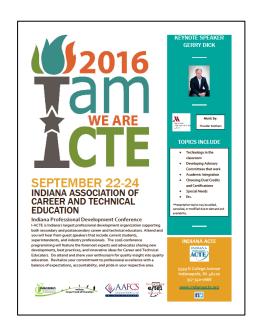
Most of you know that the State has provided MOS and MTA certifications for teachers to give to our students so they can earn certifications. I recently learned that Carmel High School had 183 students pass the Microsoft ACCESS test on their attempt! If you are interested in learning how you can offer these certifications too, complete the https://www.survey survey at monkey.com/r/VMJXL78

Indiana ACTE Conference

The Indiana Association for Career and Technical Education (IACTE) will host their annual conference from September 22-24, at the Indianapolis Marriott East. For more information go to www.indianaacte.org.

State Program Leader Contact

Dena Irwin dirwin@doe.in.gov 317.233.6004



CTSO News

Congratulations and best of luck to those students in FBLA, DECA, and BPA that competed at their State Conferences recently and who advanced to the National/International level!



Family and Consumer Sciences and Work Based Learning

Teachers' Toolbox

March 2016

Incorporate these 21st century skills related to Financial Literacy



- Knowing how to make appropriate personal economic choices
- Understanding the role of the economy in society
- Using entrepreneurial skills to enhance workplace productivity and career options

http://www.p21.org/about-us/p21-framework/257

Utilize Financial Football, a partnership between Visa and the National Football League, as a classroom resource for financial literacy. <u>Financial Football</u> is a fast-paced game that engages students while teaching them money management skills.

WBL Strategy-Explore the continuum of WBL

Career Awareness

Career Awareness should provide an initial view and exploration of careers. Career awareness may begin in elementary grades and continue through high school with a heavy emphasis in early high school.

Career Exploration

Career Exploration should provide an opportunity for students to further explore careers of interest. Students should gather detailed information about careers to help them in career planning.

Career Preparation

Career Preparation allows students to gain real-world experience related to a career pathway. Students should research and plan for post-secondary opportunities related to the career.



March is National Nutrition Month Ideas to celebrate

- Invite a dietitian to be a guest speaker in your classes
- Have FCCLA members plan a cooking demo at a food bank utilizing the resources provided
- Partner with Foodservice staff to promote nutrition in the cafeteria
- Organize a fresh fruit and vegetable tasting http://www.eatright.org/

Professional Development

Spring Family and Consumer Sciences Conference

April 21st-April 22nd Ivy Tech Corporate College 2820 N. Meridian St. Indianapolis, IN <u>Registration Information</u>

Specialist Contact

Alyson McIntyre-Reiger 317.232.9168 amreiger@doe.in.gov

Trade & Industry

Teachers' Toolbox March 2016



In the original Math-in-CTE research study, students in the classrooms of teachers trained in the model performed significantly better on standardized math tests and community college math placement tests than students who received the regular CTE curriculum. Students also improved their math skills without losing the technical skills needed for college and career readiness.

Math-in-CTE Strategy

Math in CTE is a process in which Career and Technical Education (CTE) teachers collaborate with Math teachers to develop lessons that emphasize the mathematics already in the CTE course. CTE teachers are never asked to replace what they already teach or to add math that does not belong in their courses. During the professional development process, CTE teachers work with math teacher partners in communities of practice to interrogate their curricula and identify the intersection of CTE and math concepts. This work leads to the development of curriculum maps, from which teachers then create math-enhanced CTE lessons. This is a year long process initially, with the hope that CTE teachers and Math teachers maintain the Communities of Practice they develop during the process to continue collaboration. You can find out more about the program at the National Center for Career and Technical Education website nrccte.org/professional-development/math-cte. You can find a list of developed lessons broken down by subject area at this link nrccte.org/professional-development/mathcte/lesson-plans

Opportunities

- We are currently looking for teachers to assist in revising Advanced Manufacturing and Intro to Advanced Manufacturing standards. We are also looking for teachers to help us develop the new Industrial Repair and Maintenance courses. If interested contact Davis Moore at the address below.
- This Summer Vincennes University and Lincoln Electric are hosting their annual Welding Workshop. Spend three days on the beautiful VU campus learning the latest welding processes on state of the art equipment. There will be two workshops. One for experienced teachers the other for newer teachers. This is open to all instructors. For more information contact Davis Moore at the address below.

Davis Moore 317-232-0512 dmoore@doe.in.gov

Happenings

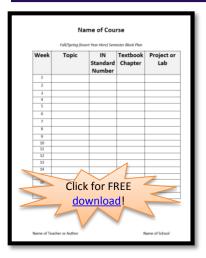
Indiana was recently recognized by the National Institute of Metalworking Skills (NIMS) as one of the top five NIMS credentialing states in the country. Indiana students earned over 2,000 of the certifications in 2015. The certifications focus on precision machining and industrial repair and maintenance. Indiana is expected to see a 6 percent growth in these areas by 2025. Over 18,000 certifications were issued nationally. This marks a 20 percent increase over 2014.



Engineering and Technology



Teachers' Toolbox March 2016



Writing a Block Plan

Block plans and/or course outlines are essential to communicate to both students and your administration what you hope to accomplish in a semester. This one or two page document can also guide you and serve as a pacing guide to ensure that you stay on topic throughout the year. You can format your block plan in a variety of ways. Here is a sample template that I created when I was teaching. It is in a chart form. I used to put it on the back of my syllabus to make a two sided document that was essential for both myself and my students to keep all year.

For examples of technology related course outlines from E/TEI and BSU go to: http://indianaete.iweb.bsu.edu/index.html

Things to include and gather when writing your course outline or block plan:

- Essential units and subcomponents of each unit
- Indiana course standards covered in each unit
- Chapters of textbook referenced or covered in each unit
- Labs or projects associated with each unit
- How many days or weeks you plan to spend on each unit or topic

Content News

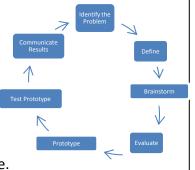
The **Technology Systems** standards are currently being written and reviewed. If you would like to help write these standards, please contact mrinehart@doe.in.gov

Environmental Sustainability is proposed to replace Biotechnical Engineering as stateapproved course title in 2016-2017.

Teaching Engineering Design

The engineering design process is a foundational component of many engineering and technology courses. How can you introduce and effectively review and reteach the topic?

Introduce or review
the engineering design
process by showing the
PBS video What is the
Engineering Design
Process? Follow up with
discussion questions
and additional activities,
listed on the PBS website.



http://www.pbslearningmedia.org/resource/phy03.sci.engin.design.desprocess/what-is-the-engineering-design-process/

Did you know?

Did you know **Global Marathon** is going on from March 8-10th? Global Marathon is a three-day, FREE virtual conference for women in engineering and technology. Register here: http://www.discovere.org/our-programs/global-marathon

Do you have a skill to showcase?



E/TEI, the professional organization for Technology Educators, is looking for proposals for this year's IACTE Conference. Want to present? http://www.indianaetei.com/2016-etei-conference-presentations-and-resources.html



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